

APPENDIX A

```
/*
** Oki Dev Program - Written by Michael Montgomery 4/10/97
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**
** This program was written to demonstrate the display request command
** to control the OKI display. This program monitors the keypad,
** and toggles the segment corresponding to the two keys entered.
10 ** The first key enters the row number (byte to be changed), and
** the second key enters the column number (bit to be changed).
**
** Pressing the Cancel key, immediately followed by Unlock key,
** cancels autoexecution of this program.
15 **
** Any other keypress is ignored.
**
*/

20 public class OkiDev {

    public static void main(String args[]) {

        // Send back the Answer To Reset (ATR)
25     _OS.SendATR();

        // Allocate command buffers
        byte[] keyscanbuffer = new byte[OkiDevConst.KEY_SCAN_CMD_LENGTH];
        byte[] keydatabuffer = new byte[OkiDevConst.KEY_DATA_CMD_LENGTH];
30     byte[] dispmapbuffer = new byte[OkiDevConst.DISP_MAP_CMD_LENGTH];

        // Allocate receive buffers
        byte[] receiveddatabuffer = new byte[OkiDevConst.RECEIVED_DATA_LENGTH];

35     // Build display command buffers
        dispmapbuffer[0] = OkiDevConst.ISO_ESCAPE;
        dispmapbuffer[1] = OkiDevConst.INS_LCD_DISPLAY;
        dispmapbuffer[2] = OkiDevConst.DISPLAY_SEGMENT_MAP;
        dispmapbuffer[3] = OkiDevConst.DISP_MAP_DATA_LENGTH;
40     dispmapbuffer[4] = (byte)0xFF;
        dispmapbuffer[5] = (byte)0xFF;
        dispmapbuffer[6] = (byte)0xFF;
        dispmapbuffer[7] = (byte)0xFF;
        dispmapbuffer[8] = (byte)0xFF;
45     dispmapbuffer[9] = (byte)0xFF;
        dispmapbuffer[10] = (byte)0xFF;
        dispmapbuffer[11] = (byte)0xFF;
        dispmapbuffer[12] = (byte)0xFF;
        dispmapbuffer[13] = (byte)0xFF;
50     dispmapbuffer[14] = (byte)0xFF;
        dispmapbuffer[15] = (byte)0xFF;
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dispmabuffer[16] = (byte)0xFF;
dispmabuffer[17] = (byte)0xFF;
dispmabuffer[18] = (byte)0xFF;
dispmabuffer[19] = (byte)0xFF;

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// Build key pad command buffers
keyscanbuffer[0] = OkiDevConst.ISO_ESCAPE;
keyscanbuffer[1] = OkiDevConst.INS_KEY_SCAN;
keyscanbuffer[2] = OkiDevConst.PARAM_UNUSED;
keyscanbuffer[3] = OkiDevConst.PARAM_UNUSED;

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keydatabuffer[0] = OkiDevConst.ISO_ESCAPE;
keydatabuffer[1] = OkiDevConst.INS_KEY_DATA;
keydatabuffer[2] = OkiDevConst.PARAM_UNUSED;
keydatabuffer[3] = OkiDevConst.PARAM_UNUSED;

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// Initialize to send key scan command
receiveddatabuffer[0] = 1;
byte inputkey;

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// Initialize unlock sequence: if cancel and unlock keys are pressed sequentially,
// the card cancels automatic execution of this test program. To continue use
// of this test program after this requires reselection of this program as
// auto-execute in the development environment. This provision is made to
// (hopefully) permit reuse and redownloading of this card in the event that
// either the test program has a bug, or the test program is not longer needed
// and the card can be reused for another purpose.

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boolean cancelpressed = false;

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// Initialize bit masks - selects appropriate bit to toggle
byte[] mask = new byte[8];
mask[0] = (byte)0x01;
mask[1] = (byte)0x02;
mask[2] = (byte)0x04;
mask[3] = (byte)0x08;
mask[4] = (byte)0x10;
mask[5] = (byte)0x20;
mask[6] = (byte)0x40;
mask[7] = (byte)0x80;

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boolean firstkey = true;
byte firstvalue = 0;

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// Light all segments
_OS.SendMessage(dispmabuffer,OkiDevConst.DISP_MAP_CMD_LENGTH);
_OS.GetMessage(receiveddatabuffer,(byte)0x02,OkiDevConst.ACK_CODE); // Ignore status reply

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boolean getmoredata = true;

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//Main Loop (do forever)
do {

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    // Set up to buffer keystrokes
    if (getmoredata)
    {

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        _OS.SendMessage(keyscanbuffer,OkiDevConst.KEY_SCAN_CMD_LENGTH);
    }
}

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        _OS.GetMessage(receiveddatabuffer,(byte)0x02,OkiDevConst.ACK_CODE);
        getmoredata = false;
    }

5    // Get control keystroke (ignore all but first)
    _OS.SendMessage(keydatabuffer,OkiDevConst.KEY_DATA_CMD_LENGTH);

    _OS.GetMessage(receiveddatabuffer,OkiDevConst.RECEIVED_DATA_LENGTH,OkiDevConst.ACK_CODE);

10    // Select buffer to display

        if (receiveddatabuffer[0] != 0)
        {
            getmoredata = true;
            inputkey = receiveddatabuffer[1];
            if (inputkey == OkiDevConst.KEY_CODE_CANCEL)
            {
                cancelpressed = true;
            }
            else if (inputkey == OkiDevConst.KEY_CODE_UNLOCK)
            {
                if (cancelpressed) _OS.Execute((short)0, (byte)0);
            }
            else
            {
                cancelpressed = false;
                if (firstkey)
                {
                    if ((inputkey < 0x10) && (inputkey >= 0))
                    {
                        firstvalue = inputkey;
                        firstkey = false;
                    }
                }
                else
                {
                    firstkey = true;
                    if ((inputkey < 8) && (inputkey >= 0))
                    {
                        // Toggle display segment specified
                        dispmapbuffer[5 + firstvalue] ^= mask[inputkey];

                        // Display current map buffer

45        _OS.SendMessage(dispmapbuffer,OkiDevConst.DISP_MAP_CMD_LENGTH);
        _OS.GetMessage(receiveddatabuffer,(byte)0x02,OkiDevConst.ACK_CODE);
                    }
                }
            }
        }
    }

50    while (true);
}

55    public interface OkiDevConst{

```

// Constants used throughout the program

```
static final byte DISP_MAP_DATA_LENGTH = (byte)16;  
static final byte DISP_MAP_CMD_LENGTH = DISP_MAP_DATA_LENGTH + (byte)4;  
5 static final byte KEY_SCAN_CMD_LENGTH = (byte)4;  
static final byte KEY_DATA_CMD_LENGTH = (byte)4;
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```
static final byte ISO_ESCAPE = (byte)0xD0;  
static final byte INS_LCD_DISPLAY = (byte)0xE0;  
10 static final byte INS_KEY_SCAN = (byte)0xE1;  
static final byte INS_KEY_DATA = (byte)0xE3;  
static final byte PARAM_UNUSED = (byte)0x00;  
static final byte DISPLAY_FIXED_POINT = (byte)0x01;  
static final byte DISPLAY_HEXADECIMAL = (byte)0x02;  
15 static final byte DISPLAY_SEGMENT_MAP = (byte)0x03;
```

```
static final byte KEY_CODE_CANCEL = (byte)0xF2;  
static final byte KEY_CODE_UNLOCK = (byte)0xF1;
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20 static final byte RECEIVED_DATA_LENGTH = (byte)3;  
static final byte ACK_CODE = (byte)0;
```

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}
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